GAO

Aviation and Transportation Subcommittee, Committee on Government Operations, House of Representatives

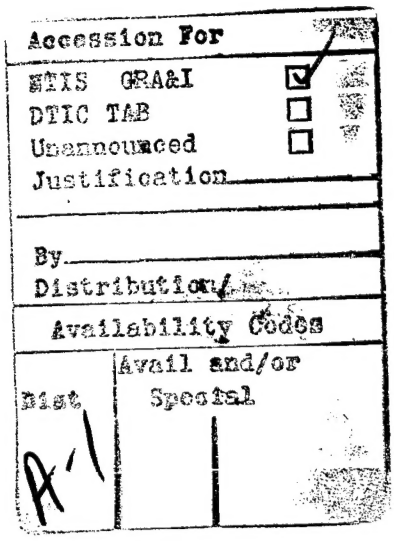
SPACE STATION

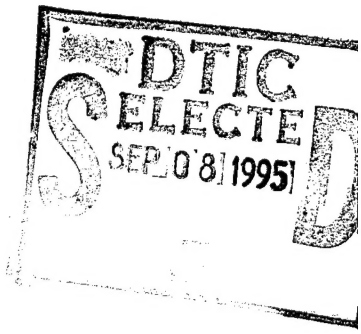
Status of Financial Reserves

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division





B-249408

July 20, 1992

The Honorable Barbara Boxer
Chair, Government Activities
and Transportation Subcommittee
Committee on Government Operations
House of Representatives

Dear Madam Chair:

As you requested, we are providing information on the financial reserves available to offset risks associated with the National Aeronautics and Space Administration's (NASA) Space Station Freedom program. In a May 1, 1991, testimony[1] before your subcommittee, we stated our concern that the space station program was not maintaining adequate financial reserves to cover unanticipated contingencies commensurate with the high risk nature of this program. Our concern was based on the effects inadequate reserves could have on the overall success of the program, including reductions in program content, schedule delays, or cost growth. In testimony the following day, NASA stated that about 26 percent, or $4 billion, of the estimated cost to develop and operate the redesigned space station for fiscal year 1992 through fiscal year 1999 was financial reserves. NASA also noted that these reserves were adequate to cover unforeseen future contingencies.

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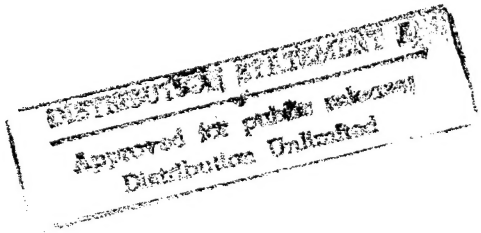
Background

Space Station. Status of Financial Reserves

In January 1984, NASA initiated a major research and development effort to build Space Station Freedom. For major research and development projects, such as the space station, anticipating and accurately estimating all costs of development and operations is highly unlikely. Accordingly, NASA's cost estimates for the space station include both a baseline program to fund the costs of known requirements and allowances for financial reserves to fund unexpected major contingencies such as schedule delays or changes in project objectives or scope. To develop and operate the redesigned facility through fiscal year 1999, NASA's current $30 billion cost estimate includes almost $20 billion for known research and development requirements and related financial reserves. Construction of station support facilities, shuttle flights to assemble and maintain the station, salaries and benefits of NASA personnel working on the station, and costs



[1]Questions Remain on the Costs, Uses, and Risks of the Redesigned Space Station (GAO/T-NSIAD-91-26).

incurred through fiscal year 1991 are among the items that comprise the remaining costs in NASA's $30 billion estimate.

Maintaining adequate financial reserves is necessary in sophisticated research and development programs to offset unanticipated program requirements and to avoid cost growth and delays. According to NASA, levels of reserves usually range from 10 percent to 35 percent, depending on factors such as project complexity, technical challenges, and time required to complete the program. Before the station's most recent redesign, NASA attempted to maintain a 30-percent to 35-percent reserve for the space station program.

NASA is planning to begin assembling the space station in low earth orbit in 1996. In order to meet that schedule, the station is scheduled to complete critical design review by the summer of 1993. After critical design review is completed, station contractors can begin to manufacture and test components in accordance with their approved designs.

Results in Brief

By March 1992, NASA's financial reserves included in its $20 billion estimate for developing and operating the redesigned station through fiscal year 1999 had decreased to a little over $3.2 billion, or about 20 percent of the baseline program of $16.6 billion.

In June 1992 NASA committed over $1.1 billion in station reserves to fund additional program requirements thereby decreasing reserves to $2.1 billion. However, according to the Director, Space Station Freedom Program, with the June 1992 commitment of reserves, all known requirements threatening the program's reserves have been funded. The June 1992 action reduced reserves to a little over 12 percent of the revised program. All but about $166 million of the remaining $2.1 billion reserves are currently scheduled for the last 5 years covered by the estimate—fiscal years 1995 through 1999.

Space station program officials are concerned about the limited reserves, but believe that with careful management and stringent cost control, they will be adequate to complete the program on time and within the current $20 billion estimate. However, we believe program officials face an extremely difficult challenge, especially during the next couple of years. If the reserves prove inadequate, program officials will have to reduce content, delay schedules, and/or increase costs.

Space Station Financial Reserves Are Limited

In November 1991 NASA told us that the redesigned space station's development and operations cost estimate through fiscal year 1999 included $4 billion in financial reserves, or about 26 percent of the baseline program of $15.5 billion. However, by March 1992, the use of reserves within the program reduced them to a little over $3.2 billion, or about 20 percent of the baseline program of $16.6 billion.

During the latter part of 1991 and into early 1992, program managers began to address a large number of unfunded program requirements initially estimated to cost over $2.1 billion. After extensive evaluation, in June 1992 space station program managers committed over $1.1 billion of station reserves to fund these requirements. Included in the items funded were

- avionics and software testing and development systems to ensure that various station systems and elements work properly prior to launch and satisfy their design requirements,
- ground support equipment to test communication and tracking flight hardware prior to launch,
- a data management system to distribute scientific payload data collected on orbit to various ground users, and
- design changes to the U.S. laboratory and the propulsion modules to enhance meteoroid and orbital debris protection.

As a result, financial reserves through fiscal year 1999 are now down to $2.1 billion, or a little over 12 percent. This amount includes annual reserves during the remainder of this fiscal year and over the next 2 fiscal years of only 1 percent to 4 percent. For example, the space station program's recommended funding level for fiscal years 1993 and 1994 totals over $4.7 billion, of which less than $145 million is for reserves. The overall level of reserves through fiscal year 1999 reaches 12 percent only because of higher reserve levels estimated for fiscal years 1995 through 1999. All but $166 million of the remaining reserves, or 92 percent, are currently scheduled for the last 5 years covered by the estimate—fiscal years 1995 through 1999.

NASA space station program officials are concerned about the reserve margin, but according to the Director, Space Station Freedom Program, NASA's $1.1 billion commitment of reserves in June 1992 resolved all outstanding unfunded requirements. Therefore, program officials believe that, with careful management and stringent cost control, the reserves that remain in the program will be adequate to cover future contingencies.

However, we believe that they face an extremely difficult challenge, especially in managing the program over the next 2 years when the financial reserves are very limited. The program's critical design review will not be completed until next summer and potential problems that may arise throughout the building, testing, and launch of station elements are yet to be faced. If the reserves prove inadequate, the program will have to reduce content, delay schedules, and/or increase costs.

Scope and Methodology

To obtain information on the financial reserves NASA maintains in the space station program, we interviewed NASA Headquarters officials in the Comptroller and Space Station program offices. We also reviewed financial and program documents related to the level of financial reserves in the program and the use of those reserves to fund additional program requirements.

We conducted our review from March to July 1992 in accordance with generally accepted government auditing standards. As requested, we did not obtain written agency comments on this report, but we obtained the views of responsible NASA officials and considered them in preparing this report.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after its issue date. At that time, we will send copies to the NASA Administrator and appropriate congressional committees. Copies will also be made available to other interested parties.

Please contact me on (202) 275-5140 if you or your staff have any questions concerning this report. The major contributors to this report are listed in appendix I.

Sincerely yours,

Mark E. Gebicke

Mark E. Gebicke
Director, NASA Issues

Major Contributors to This Report

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